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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/526,807

10/12/2005

Bastian Albers

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08/20/2008

EXAMINER

RECEK, JASON D

ART UNIT

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2142

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/526,807	Applicant(s) ALBERS ET AL.	
	Examiner JASON RECEK	Art Unit 2142	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This is in response to the RCE filed on June 5th 2008 which concerns application 10/526807.

Status of Claims

Claims 1-12 are pending, claims 13-22 have been cancelled.

Claims 1-12 are currently rejected under 35 U.S.C. 103(a).

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/5/08 has been entered.

Response to Arguments

2. Applicant's arguments, filed 6/5/08, with respect to the rejection(s) of claim(s) 1-12 have been fully considered and are persuasive. Specifically, the argument that the

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term "delay budget" as defined in amendment claim 1 is not disclosed by Radha is found persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Balachandran et al. US 7,068,619 B2.

3. Applicant states that they did not see "selectively executing" retransmission in the cited portion of Zhu, this has been expanded upon in the rejection below for further clarification. Applicant's statement "when facing self-congestion, this is probably the worst procedure to follow" (pg. 7) is not understood since it is conclusory and not supported by an explanation. Furthermore, it is irrelevant whether the "best" procedure is disclosed by a reference.

4. Applicant also argues that claim 9 should be allowed since Hackenberg does not supply the missing limitations. This argument is not persuasive in light of the new rejection.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-8 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Radha et al U.S. Pat. No. 6,700,893 B1 in view of Zhu et al. U.S. 6,085,252 and Balachandran et al. US 7,068,619 B2.

Regarding claim 1, Radha discloses “transmission of a plurality of data packets from a sender to a receiver, wherein the data transmission is performed over a link with limited transmission capacity” as streaming data over a network (Fig. 1), “a presentation time is defined for a first data packet of said plurality” as a time that a data packet must be delivered in order to be useful (col. 1 ln. 50-52), “the receiver performs a first check whether data packets are correctly received and at least one data packet is selected for retransmission” as the receiver detecting missing packets and requesting retransmission (col. 3 ln. 22-26), “determining a delay budget from the presentation time of the first data packet” (col. 2 ln. 58-60), “determining a delay requirement for the retransmission of the selected data packet” as calculating how long it will take to retransmit the lost data packet (col. 12 ln. 53-55), “comparing the delay requirement and the delay budget” as comparing the budget with the transmission requirement (col. 15 ln. 41-50).

Radha does not specifically disclose “selectively executing retransmission for the selected data packet according to the result of the comparison” however this is taught by Zhu as a QoS manager determines whether or not to request a retransmission based at least on a bandwidth budget (col. 5 ln. 10-16).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Radha by selectively retransmitting as taught by Zhu for the purpose of conserving bandwidth. Zhu suggests this by disclosing that too much data will slow down the network (col. 6 ln. 8-11).

Radha and Zhu do not explicitly disclose “the delay budget indicating the amount of time by which original data packets can be delayed without resulting in a buffer underflow” however this is taught by Balachandran as determining a delay rate (budget) and aborting recovery if the data would not be received in time (buffer underflow). See Balachandran (col. 2 ln. 35-46).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Radha and Zhu with the teaches of Balachandran for the purpose of maximizing bandwidth. Balachandran teaches that by using a delay rate (delay budget) streaming data performance is improved (col. 2 ln. 27-46).

Regarding claim 2, Radha discloses “the receiver stores data packets in a buffer with a buffer fill level and wherein the delay budget is a function of the buffer fill level” as a buffer for receiving packets and a delay budget controller that monitors the fill level or underflow status of the buffer (col. 5 ln. 64-67, Fig. 1).

Regarding claim 3, Radha discloses “the delay budget is determined from the presentation times for each of a group comprising at least two first data packets” as providing a delay budget controller capable of operating on streams of data packets (col. 3 ln. 9-14) thus a delay budget for a group of at least two packets exists.

Regarding claim 4, Radha discloses “the first data packets of the group are to be transmitted in a predefined sequence, and wherein additional data packets are to be

added to the group, which are the next data packets for transmission in the predefined sequence” as the invention relates to a stream of data (col. 3 ln. 9-14) the packets have a predefined sequence, and “the adding of additional data packets to the group is stopped if the delay budget is expected to remain constant for further additional packets” as constraints that the delay budget must adhere to, one of which is that the budget is determined by packet retransmission time and thus only a finite number of packets may be selected (col. 12 ln. 60- col. 13 ln. 3).

Regarding claim 5, Radha discloses “the receiver requests retransmission of the at least one data packet in a status message” as the receiver requesting retransmission of selected packets by sending a status message that the packets were not received (col. 16 ln. 18-20, Fig. 6).

Regarding claim 6, Radha discloses “the delay budget is reduced by the delay requirement if a retransmission is performed” as a delay budget that consists of delay requirement thus when retransmission is performed the delay requirement is no longer and the delay budget would be reduced (col. 12 ln. 52-65).

Regarding claim 7, Radha discloses “a further comparison of the delay budget with a further delay requirement is performed before a further calculation of the delay budget” as calculating the delay budget once, and then continually comparing the budget with the delay requirement for a particular packet (col. 16 ln. 2-17, Fig. 6).

Regarding claim 8, Radha discloses “the delay budget is updated if a present rate of the data transmission is lower than the limit of the data transmission capacity” as a delay budget that adapts to network conditions (col. 11 ln. 10-12) such as round-trip delay and bandwidth (col. 11 ln. 51-52).

Regarding claim 10, Radha discloses “a presentation time of the at least one selected data packet is compared to an estimated arrival time of the at least one selected data packet at the receiver in a further check and wherein the retransmission of the at least one selected data packet is performed according to the result of the further check” as a time that a data packet must be received in order to be used (col. 1 ln. 50-52), the purpose of the invention is to eliminate wasteful retransmission, the arrival time is determined from the retransmission time and if successful the packet will be recovered (col. 13 on. 35-42).

Regarding claim 11, it is directed towards a sender for performing the method of claim 1 and is therefore rejected for the same reasons as claim 1. However, Radha does not specifically disclose that the sender has ability to “define a presentation time for a first data packet” nor “determine a delay budget” nor “determine a delay requirement”. Radha discloses the receiver as having these capabilities (col. 2 ln. 58-60, Fig. 1) and furthermore teaches that the sender and receiver may be PCs (col. 5 ln. 27, col. 6 ln. 9).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Radha by providing the functionality taught in the receiver in the sender. It is well known in the art and yields predictable results to have a server perform functions for a client, by adding the ability to the sender to determine delay budget and delay requirement, the sender is now acting like a server and performing functions for the client.

Regarding claim 12, it is directed towards a receiver for performing the method of claim 1 and is therefore rejected for the same reasons as claim 1.

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Radha, Zhu and Balachandran in further view of Hackenberg et al. U.S. Pat. No. 6,792,470 B2.

Regarding claim 9, Radha, Zhu and Balachandran do not disclose “a priority is attributed to the at least one selected data packet and wherein the retransmission is executed according to said priority” however this is taught by Hakenberg as determining the level of priority for a data frame and transmitting the frame with higher priority (col. 6 ln. 42-54, Fig. 6).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Radha, Zhu and Balachandran with the priority attribute of Hakenberg. The motivation for doing so is to provide quality of service. It is well known

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in the art that a priority attribute can be used to provide quality of service, doing so yields predictable results.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Harumoto et al. US 2002/0004840 A1 discloses a method for streaming data that uses a delay time and target value to avoid buffer underflow (abstract).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON RECEK whose telephone number is (571)270-1975. The examiner can normally be reached on Mon - Thurs 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell can be reached on (571) 272-3868. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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